



# Self Regulated Proper E Liquid Manufacturing

Michael Guasch  
President

Molecule Labs, Inc.  
Pittsburg, CA USA



[www.moleculelabsinc.com](http://www.moleculelabsinc.com)

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ELIQUID MANUFACTURING

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# Michael Guasch

- 20 years of experience in specialty chemical manufacturing
- Inc. 500 fastest growing privately held companies 3 years in row 2003-2005
- Sold the business to DuPont Chemical Company in 2005
- Continued specialty contract manufacturing for DuPont
- Started E Liquid Manufacturing in 2013



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# Overview

- Molecule Labs, Inc. is a contract manufacturer specializing in eliquid manufacturing for branded product lines
- Molecule Labs does not own any brands of eliquid
- Self regulated, proper eliquid manufacturing
- AEMSA Standards, BSI PAS 54115; 2015
- Quality Control
- Improper eliquid manufacturing
- Financial statistics

→ British Standards Institute

By the way  
Contract  
Manufacturer







# Proper eLiquid Manufacturing

- Conform to AEMSA Standards
- Utilize BSI (British Standards Institute) as applicable
- Develop self imposed Standard Operating Procedures
- Batch test as needed
- ISO Certified Cleanroom Manufacturing
- Employee Nicotine Exposure Control





# AEMSA Certified Member



## AMERICAN E-LIQUID MANUFACTURING STANDARDS

This picture is on the  
AEMSA Home Page



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# AEMSA Certified Facility

## Certificate of Completion

Hereby presented to



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for successfully completing the requirements to become an

AEMSA CERTIFIED MEMBER # 062015-001

*Linc Williams*  
Chairman of Compliance



June 2015  
Date

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# British Standards Institute (BSI)

## PAS 54115: 2015

Manufacture, importation,  
testing and labeling Guide

- Vaping products including:
  - electronic cigarettes
  - e-liquids
  - e-shisha
- And directly-related products







# Clean and Organized Manufacturing



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# ISO Certified Cleanroom



**MICROMED LABORATORIES**  
TODAY'S CHALLENGES • TOMORROW'S SOLUTIONS

1129 North McDowell Blvd., Petaluma, CA 94954  
Phone: 707-782-0792 Web: [www.micromedlabs.com](http://www.micromedlabs.com)

**CER CERTIFICATION**

Certification Date: 05/29/2014

Facility: Molecule Labs Report #: 2014-713

Location: Pittsburg, CA Tested by: K. Dion/Vico A.

RECERTIFICATION DUE DATE: 05/2015

**CER INFORMATION**

CER ID: E-Liquid (LERS)

**THIS ROOM HAS BEEN CERTIFIED TO:**

☒ ISO14644-1 Class: 5 ☐ 6 ☒ 7 ☐ 8 ☐ 9

☐ IEST-RP-CC002 ☐ ANSI/NSF-49 ANNEX F

☒ IEST-RP-CC034 ☐ ASME N510

☒ IEST-RP-CC006 ☐ OSHA/ANSI Z9.5

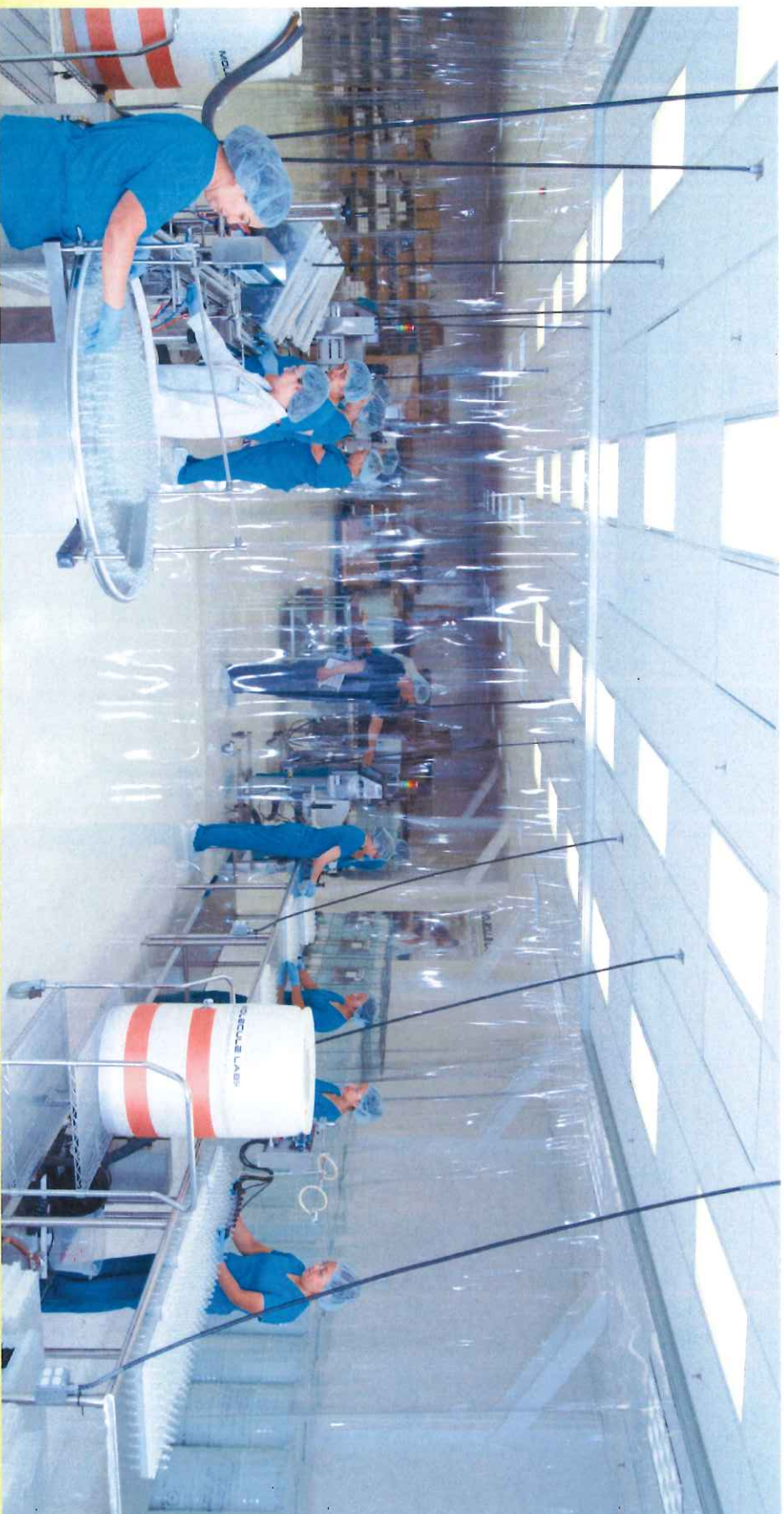
☐ OTHER







# Inside the Cleanroom



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# Small Batch Processing



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# Automatic Filling Equipment



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# Semi Automatic Filling



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# Clean Packaging Storage



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# Clean Bulk Storage



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# Clean Bulk Storage



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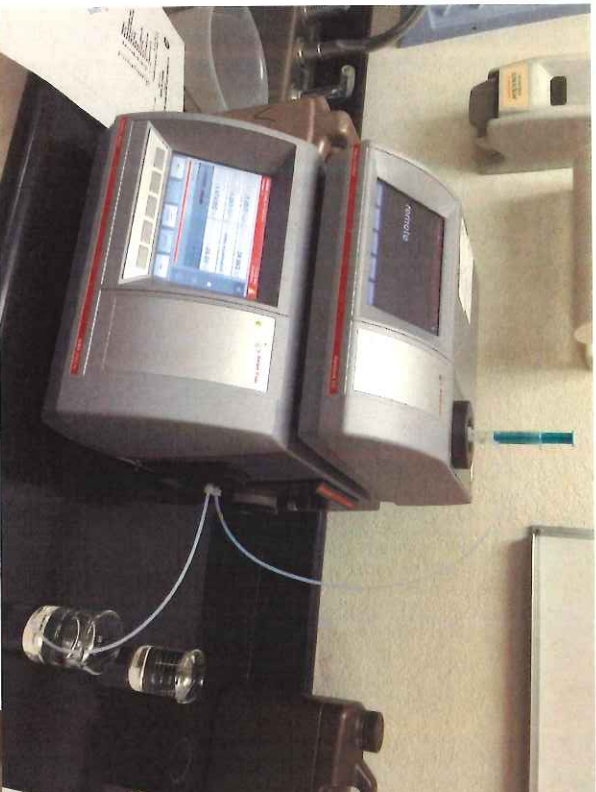
# Quality Control Sample Analysis

- Incoming Raw Material (random)
  - Color, smell, clarity
  - Density
  - Refractive Index
  - Nicotine concentration
- Finished Product (random)
  - Color, smell, clarity
  - Density
  - Refractive Index
  - Nicotine concentration



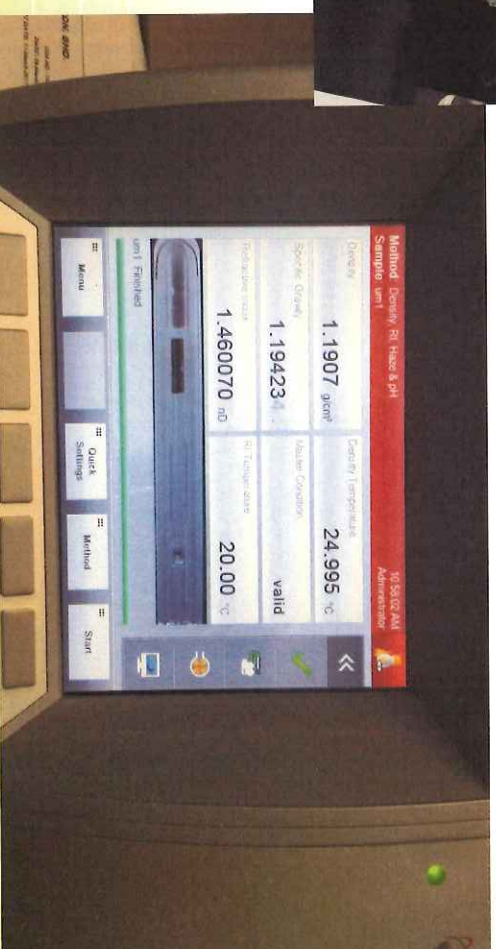


# Quality Control per Batch



Testing Apparatus for:

- Density
- Refractive Index
- Allows for Consistent results



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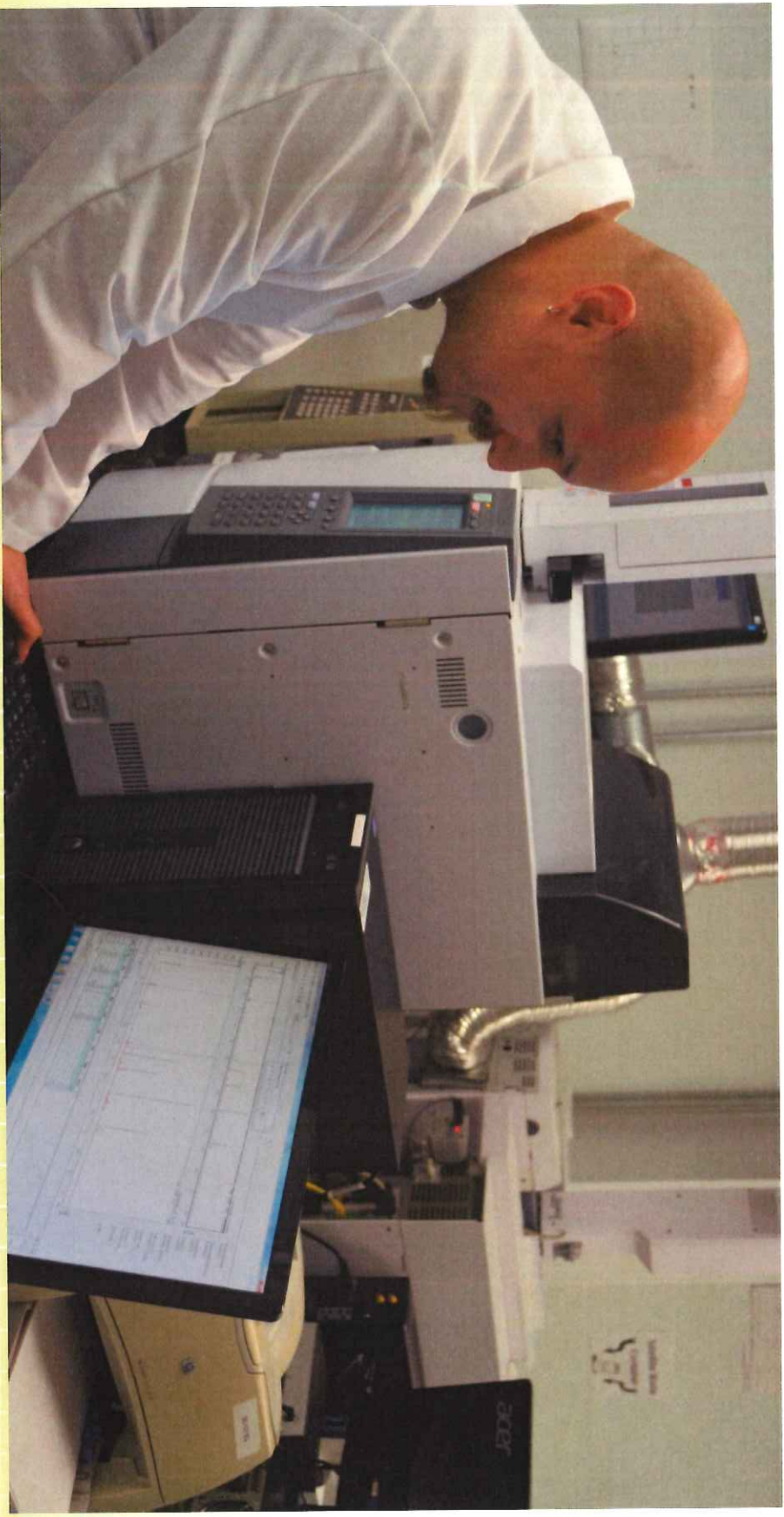
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# Nicotine Quality Control Tests



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# Nicotine Processing Lab



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# Worker Safety, Fume Extraction

- Nicotine Fume Extraction
- Extracts nicotine fumes during nicotine processing
- Returns HEPA and Carbon filtered fresh air back into clean room
- All nicotine processing employees are tested for nicotine exposure using air pumps for 8 hour shift



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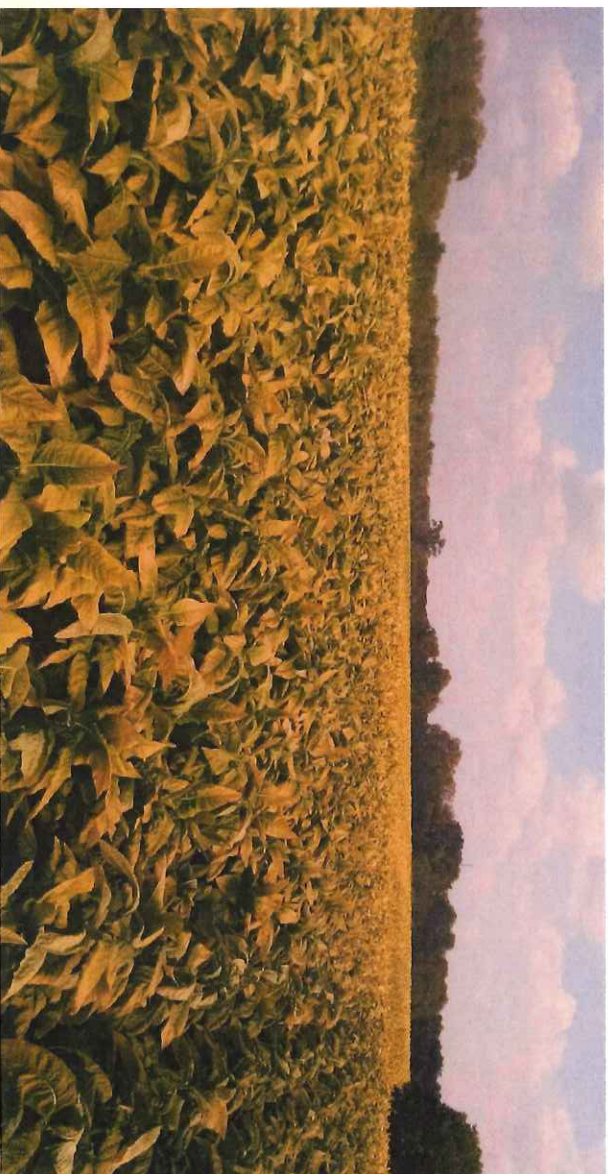
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# Nicotine from Kentucky Tobacco

- American Tobacco Farmers are now selling their tobacco for a greater price to the eliquid industry



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# Waste Water

- Our rinse water from a 3 mg/ml is <0.100 ND
- Our rinse water from a 18 mg/ml is <0.148
- Triple rinse of 99% nicotine
  - Rinse #1 = .574 ppm (recycled)
  - Rinse #2 = < 0.100 ppm ND
  - Rinse #3 = < 0.100 ppm ND
- Less than 50 gallons per month of <0.148
- 18 mg/ml skus are shrinking weekly
- Environmental Impact, Negligible





# Research and Development 2015

- New Chemist  
Hired November  
2015
- \$250K in R & D  
Budget
- \$150K in R&D  
Equipment
- Developing  
safer flavors



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## 4 Production Lines



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# Everyday Manufacturing



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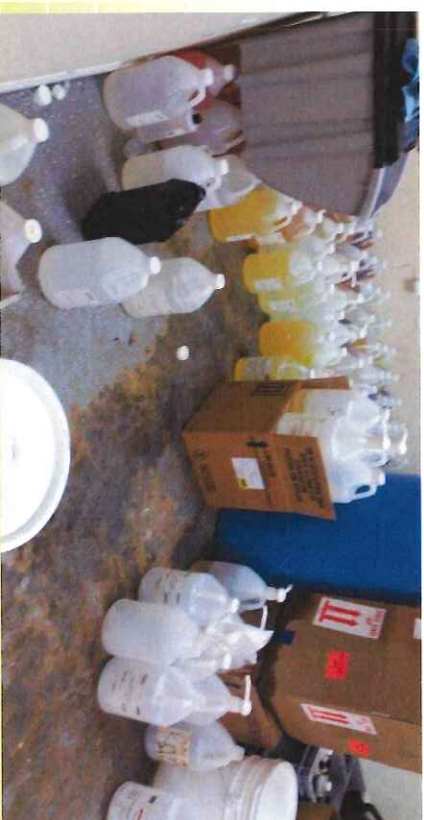
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# The Wrong Way



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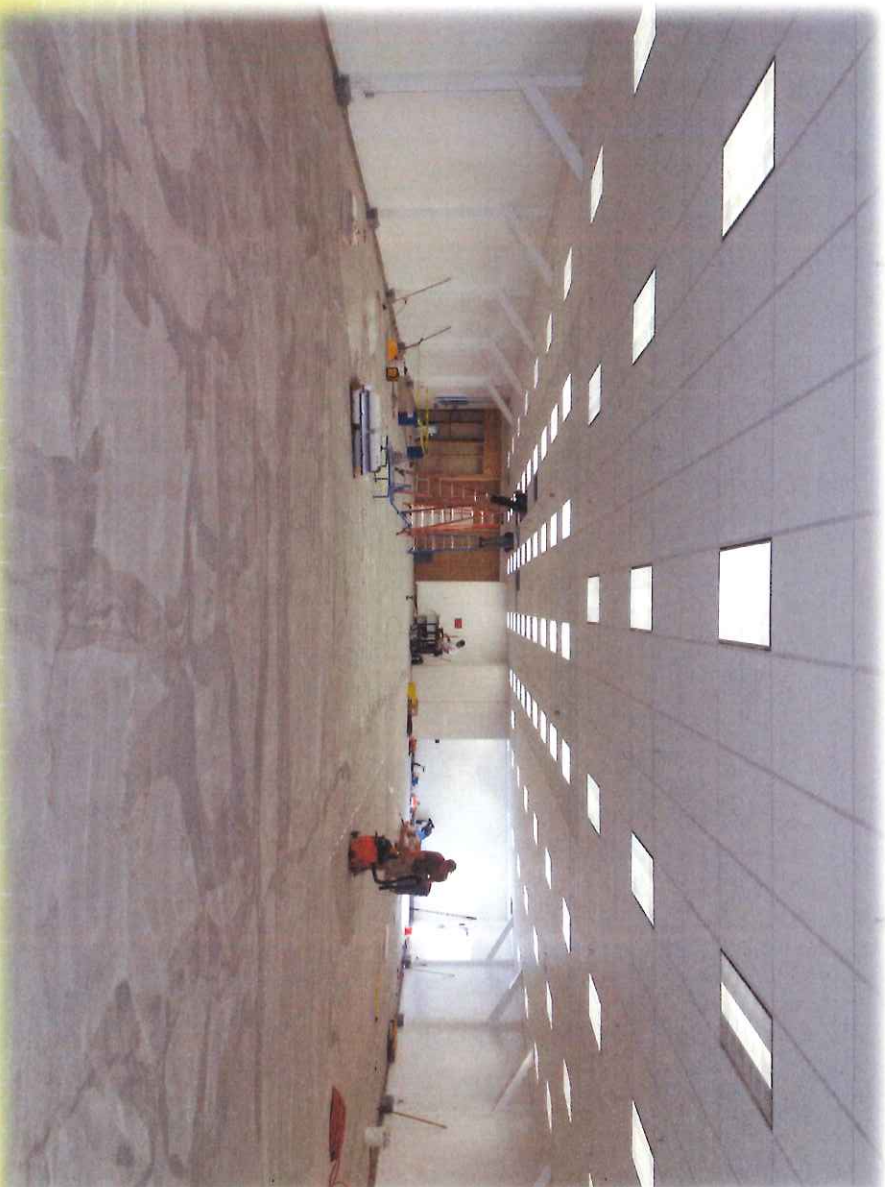
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# November 2014

- 9000 more sq. ft.
- 2000 sq. ft. clean room
- \$500K investment
- 12 head fully automatic filling line
- 1MM bottle a mo. capacity



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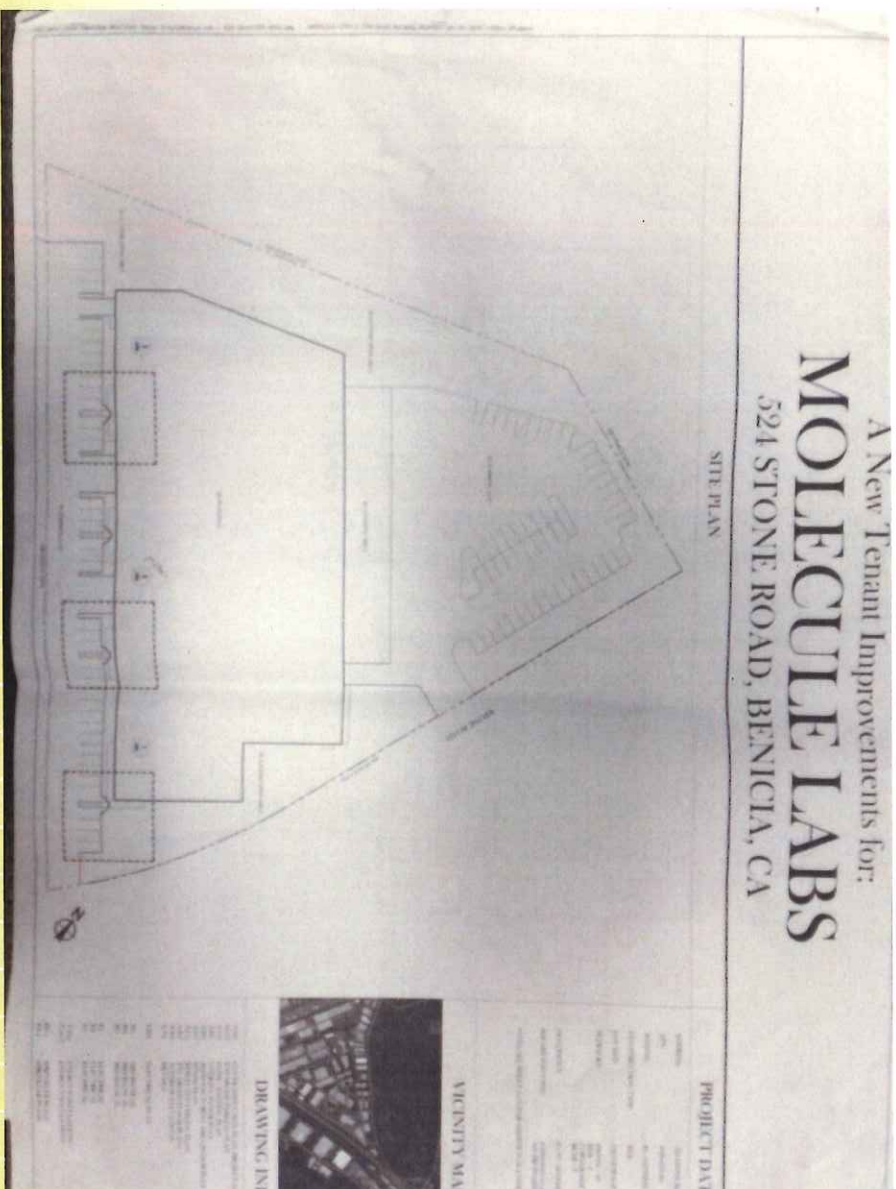
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# New \$2 Million Build Out - 2016



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## New Building - November 2015

- 67,000 sq. ft.
- 8000 sq. ft. clean room
- 25,000 sq. ft. manufacturing floor
- \$2 million investment
- 8 line capacity
- 4 MM bottle a mo. capacity
- 22,000 sq. ft. fulfillment center
- 20 new employees



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# New Warehouse Build out



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# Infrastructure Statistics

2015	2016 projected	2017 projected
<ul style="list-style-type: none"><li>• 21,000 sq. ft. leased building</li><li>• <b>40 employees</b></li><li>• \$1MM capital expenditures</li><li>• Increased R&amp;D investment by \$250K</li><li>• Output capacity 1MM bottles per month</li></ul>	<ul style="list-style-type: none"><li>• 67,000 sq. ft. leased building</li><li>• <b>60 employees</b></li><li>• \$2MM capital expenditures</li><li>• Increased R&amp;D investment by \$500K</li><li>• Output capacity 2MM bottles per month</li></ul>	<ul style="list-style-type: none"><li>• 67,000 sq. ft. leased building</li><li>• <b>80 employees</b></li><li>• \$.5MM capital expenditures</li><li>• Increased R&amp;D investment by \$250K yr.</li><li>• Output capacity 3MM bottles per month</li></ul>







# Financial Statistics

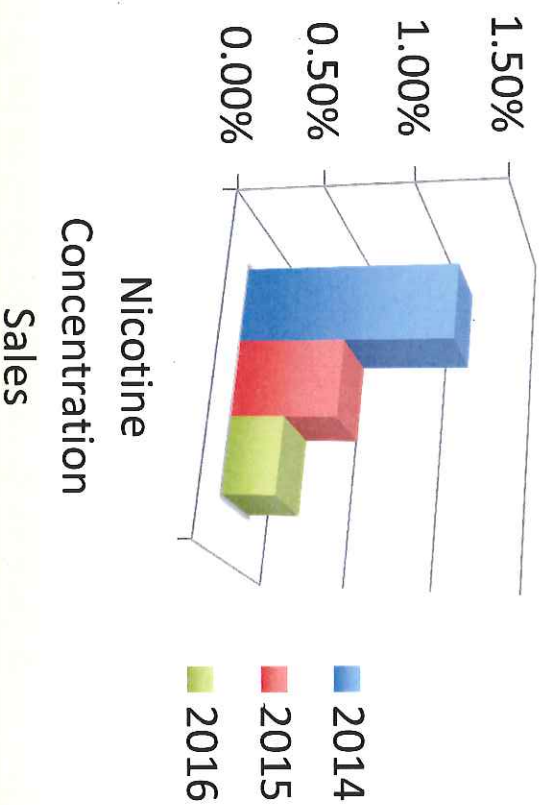
2015	2016	2017
<b>projected</b>	<b>Projected</b>	<b>Projected</b>
<ul style="list-style-type: none"><li>• 9,000,000 bottles produced</li><li>• Retail value average \$16</li><li>• Vapor Store Retail sales of \$144 Million</li></ul>	<ul style="list-style-type: none"><li>• 20,000,000 bottles projected</li><li>• Retail value average \$16</li><li>• Vapor Store Retail sales of \$320 Million</li></ul>	<ul style="list-style-type: none"><li>• 30,000,000 bottles projected</li><li>• Retail value average \$16</li><li>• Vapor Store Retail sales of \$480 Million</li></ul>





## Average Nicotine Use Reduction over 3 years (approx.)

- 2014 - 1.2%
- 2015 - .6%
- 2016 - .3% projected



Approx. averages based  
on overall sales to  
customers







# Proposed Deeming Regulations

- We embrace science based regulation to improve the industry and promote public safety
- We feel we will be able to meet the PMTA for manufacturing protocols and non clinical data required
- We are concerned our customers may be unable to meet the PMTA Public Health Population Impact for each product
- Without our customers, we would have no business



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# Thank You

# Questions?



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